

kindness for the specimen figured. It is a perfectly distinct species, and may easily be recognised by its form, its pellucidness, and its smooth olive-coloured epidermis. It somewhat resembles a young *Anodonta* on the exterior, but the elevated lamelliform teeth easily distinguish it from that genus. Its resemblance to a Spanish olive is very striking."

*Note.*—This shell, which Lieutenant HUTTON, (vol. iii. J. A. S.) refers with doubt to the young of *U. marginalis*\*, from which it is perfectly distinct, is abundant in the shallow pools left on the sands of the Jumna and Ganges after their periodical rise. I have never met with a larger specimen than that figured by Mr. LEA. The colour of the epidermis varies from a pale clear green to a pale brown.

In concluding these notes on Mr. LEA's interesting descriptions, I may observe, that the Asiatic Society is indebted to him for a series of American fresh-water shells, chiefly *Uniones*, of which a list was published in the J. A. S. vol. i. and for a copy of his Observations on the genus *Unio*, printed in 1829.—W. H. B.

IV.—*Description of the Bearded Vulture of the Himálaya.* By  
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Ordo RAPTORES—Fam. VULTURIDÆ.

Genus *Gypætos*.

*Rostrum rectum ; basi plumis setaceis aurtorsum directis tectum ; supra rotundatum ; mandibula inferior, basi fasciculo, plumis rigidis elongatisque ornata ; cera plumis tecta ; tarsi breves, plumosi.*

Species—*Barbatus*, LIN.

Synonyma.—*Vultur barbatus, necnon barbarus*, LIN. *Vultur aureus*, GESNER. *Nisser or Golden Eagle*, BRUCE. *Bearded Vulture*, EDWARDS. *Lammer Geyer of the Swiss*, SHAW. *Father Long-beard of the Arabs of Egypt*, BRUCE. The Bearded Vulture of the Himálaya, so familiar a tenant of the western portion of these mountains, nor yet unknown to, though much less common in, the eastern or Nipalese division of them, seems to have escaped the research of HARDWICKE, and of GOULD's contributors. There is no delineation of it in either the Century of the latter, or in the Illustrations of the former gentleman. It has also escaped the active and enlightened inquiries of the Zoological Journal, notwithstanding the startling, and, I fancy, exaggerated, notice of it contained in HEBER's popular narrative. On these grounds, I am induced to forward to the Asiatic Society a draw-

\* Lieutenant HUTTON asks if it can be the young of his *Unio*, No. 18,\* of which the specimens deposited in the Museum Asiatic Society are *U. marginalis*.—LAMARCK.

ing and description of a very fine specimen killed in the Kheri pass, by my brother Lieut. W. HODGSON: those who have better opportunities than I have of describing the bird's average size and internal structure, from comparison of numerous fresh subjects, seeming, year after year, disposed to reject the task.

My specimen is apparently that of a mature bird; but its sex is unknown to me. It measures, from the tip of the bill to the end of the tail, three feet ten inches, and has a breadth between the tips of the wings, not less than seven and half feet. The bill to the gape is 4 inches: the tarsi are  $3\frac{3}{4}$  inches: and the central toe and talon  $4\frac{5}{8}$  inches. The dimensions are given, at length, at the close of this paper; meanwhile I proceed to notice the characters of the bird, and to depict his general appearance and plumage, premising, that (according to my information) his *manners* are decidedly more vulturine than aquiline. Ordinarily, he is met with in groups, or pairs, or singly, without marked distinction of habits in that respect. But the prospect of an abundant repast is sure to collect numbers of the species, too voraciously intent upon satisfying the cravings of an appetite dependent for its gratification upon contingencies, to admit of their betraying any of that shyness of man which the aquiline race invariably manifest. If the flesh pots be exposed at Simla, or Massuri, or elsewhere in the western hills, it becomes necessary to keep a good watch upon them, lest the Bearded Vulture steal a share of their contents; and the offals and carrion-carcases, freely abandoned to him by our European soldiery, and by the peasantry, he rushes to devour, almost heedless of the neighbourhood of human-kind. Such too in their manners are the Bearded Vultures or *Gypaëti* of Europe and of Africa, which I apprehend are specifically the same with our Asiatic type, due allowance being made for the occasional exaggeration and inaccuracy of describers, as well as for the remarkable variety of aspect which the species itself is apt to exhibit. Of the *lammer geyer* of the Alps, I have access to no particular description: but the detailed accounts of BRUCE and of EDWARDS, relative to the African bird, cannot be carefully corrected by each other, and then applied to the Himálayan subject, without leaving a full conviction of the identity of the species. For instance, BRUCE's assertion of the partial nudity of the head, must be amended by reference to EDWARD's statement, that it is covered with small, close plumes; or, must be accounted for by BRUCE's own surmise, that the subject of his examination was under moult. Neither of their descriptions require any other allowance, in order to suit our bird; for differences in *colour* are too notoriously caused by sex, age,

health, and season, in most species of the Raptorial order, to warrant any nice distinction on that basis.

EDWARDS gives seven and half feet for the breadth, and three feet four inches for the length of the African variety of the *Gypaëtos*; whilst BRUCE's measurements carry the size of it up to eight feet four inches of breadth, and four feet seven inches of length. My specimen of the Himálayan variety of this bird is intermediate between those two statements: but I have been assured by my brother and others, that mine is decidedly a small individual; and that, whilst no credit is due to HEBER's statement of 26 feet between the wings, there can be little doubt that the Indian *Gypaëtos* frequently has ten feet expanse of wings, and probably, sometimes, even eleven. The general structure and aspect of the Himálayan variety of this species, by their compound character, made up of Eagle and of Vulture, indicate the excellence of STORM's generic title of *Gypaëtos*, or Vulture-Eagle. The bill and head have a distinctly vulturine cast; but the wings, tail, and feet are scarcely less decidedly aquiline; and, upon the whole, the general semblance partakes more of the eagle than of the vulture.

The bill's length is to that of the head as 4 to  $2\frac{1}{4}$ ; its form is strictly vulturine, distinguished only by somewhat superior elongation, and by the considerably greater compression of the anterior part, or that beyond the cere; where the ridge is almost sharpened, and the sides (as nearly as may be) devoid of convexity. The cere is wanting, and is replaced by a large mass of bristles, originating with the lores and forehead, which bristles, being directed forwards, and closely applied to the bill, entirely conceal the cerous portion of it, as well as the apertures of the nares. The form and position of the nares agree very well with those of *Vultur Pondicerianus*: that is, they are opened *considerably*, and occupy a place much nearer the tip than the gape of the bill: but they are less vertically cleft than in *Pondicerianus*, and have a more anteal aspect. They are long ovate, obliquely transverse, opened forwards, and entirely hid by the bristly incumbent cere coverts.

Another and similar mass of setaceous hair, to that just spoken of, protects the base of the *lower* mandible of the bill, being implanted on its sides; and a third tuft originates on its inferior surface, where the horn ceases, in order to afford extensibility to the gullet.

The last or gular tuft, like the ceral, is directed forwards, extending to the tip of the mandible, and there ending in a fork. This last patch of bristles, (which gives its trivial name to the species,) is freer, or less applied to the bill, than the others are. Hairs, scarcely



less setaceous than those laid over the bill, are likewise directed *backwards* over the head, shading the brows in two narrow lines, which terminate near the occiput, and have a common origin with the cere-coverts. The head, lores, and throat are perfectly clad in short, soft, composed, narrow, and pointed plumes. These small feathers give place suddenly, at the hind part of the head, to others of the same lanceolate form, but of ample size and free set, which adorn the whole neck, above and below, and have considerable affinity to the vulturine ruff. The head is broad and flat crowned, but not so flat or so broad as in the vultures: the eye, like their's, mean and small. The wings are of vast amplitude, reaching to within five inches of the tip of a tail that is no less than 22 inches long. They are high-shouldered, but less strikingly so than in the vultures. The prime quills exceed the tertiaries by 6 inches: first remex  $3\frac{1}{2}$  inches less; the 2nd, which is very little if at all inferior in length to the 3rd, and 4th, the longest of all. The outer vane of all these quills is not emarginated; but the inner is strongly so, remotely from their tips. Though there be no appearance of moult in my specimen, I suspect that the relation of the 2nd, 3rd, and 4th remiges, as above stated, can hardly be the permanent and characteristic one; which probably gives 4th quill longest. The tail is longer than in any aquiline or vulturine bird I know, and is much and regularly gradated on the sides, the extreme lateral feathers being six inches shorter than the central ones; I should call the tail, therefore, wedged.

The legs are very short, and less muscular than in the genus *Vultur*; tarsi low and completely plumed, as in the Golden Eagle: thigh coverts long, reaching, (if directed towards them,) to the bases of the toes. The toes and talons are of the aquiline type: the former of medial unequal length and thickness, and reticulated, with the outer toes connected to the centrals by a large basal membrane: the latter, or talons, larger, acuter, and more falcate, than in the vulture, and as much so as in most of the Falconidæ: the outer fore and hind talon largest and equal; the central, less considerably; and the inner, as much smaller again. The general colour of our specimen is dark brown above, and rusty below; but the whole upper part of the back, and the top of the ruff on its dorsal aspect, are nearly unmixed pale orange: the shafts of the wing and tail feathers are mostly white; and their vanes, as well as those of the wing-coverts, are irregularly varied (for the most part, internally) with yellowish marginal or central streaks. The entire ruff, except where it fringes the occiput, is saturate, unmixed, brown; and the throat is essentially the same, but paler, and touched, here and there, with yellow. The

head and cheeks are whitish for the most part: the ceral and gular bristles, and those over the brows, pure black, as also a moustache or stripe backwards from the gape: bill and talons seemingly horn-yellow; and toes leaden-blue.

*Dimensions.*

	<i>feet. inch.</i>
Tip of bill to tip of tail, . . . . .	3 10
Bill, length of, . . . . .	0 4
Ditto basal height, . . . . .	0 1 $\frac{3}{4}$
Ditto basal breadth, . . . . .	0 2 $\frac{1}{2}$
Expanse of wings, . . . . .	7 6
Tarsus, . . . . .	0 3 $\frac{3}{8}$
Central toe, . . . . .	0 3 $\frac{1}{2}$
Ditto talon, . . . . .	0 1 $\frac{3}{8}$

Sex unknown.

P. S. Since writing the above description, it has been suggested to me by Dr. CAMPBELL, that I have overlooked an account of the Himálayan Vulture-Eagle, by Lieut. HUTTON, in the 34th No. of the Journal. Adverting to that account, I find no reason to alter my own, or to retract the opinion therein stated, that the Indian Gypaëtos is merely a variety of the single known species, which is common to Europe, Africa, and Asia. Lieut. HUTTON gives his bird the same length as mine nearly, or 3 feet 11 inches; but he makes the expanse of its wings 9 feet 6 inches. Is there not here some undue allowance for shrinking in his 'old and mutilated' specimen? The wings of his bird agree very closely with mine in respect to the relative size of the prime quills: but I still think that this point wants ascertainment, by reference to several mature specimens in known full plumage. Again, I would reiterate, that differences of colour are of no importance: my bird has no dark mark across the head.

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V.—*Red-billed Erolia. By the same.*

[Regarding the present paper, it is our duty to bring forward the following facts. In November, 1829, Mr. HODGSON sent to the Asiatic Society (presented and acknowledged, in the Proceedings of January, 1830,) this description, and a coloured drawing of natural size of a Wader, which he called "the red-billed Erolia." It accompanied several other similar notices, which are published in the second part of the 18th volume of the Asiatic Researches. But by some accident, the Erolia seems to have been omitted and mislaid, nor can it be found among the papers handed over to ourselves, in 1831, by the late Mr. CALDER, who had previously conducted the publication of the Physical Researches. The bird is a great curiosity, and has been very recently made known to the public